trichromatic diffraction pattern (6) are interconnected to form a local chromatically additive brightness value (10, 10').

8. (Amended) The grating optical sensor as claimed in claim 1, characterized in that the evaluation device includes a comparison arrangement (12) for determining the trichromatic diffraction pattern (6) with best agreement between the local chromatically additive brightness values (10, 10').

A2 cont.

9. (Amended) The grating optical sensor as claimed in claim 1, characterized in that the receivers (8) assigned to a trichromatic diffraction pattern (6) are interconnected to form a local trichromatically additive brightness value (11, 11').

10. (Amended) The grating optical sensor as claimed in claim 8, characterized in that the evaluation device includes a white standard forming unit (13) whose output signal is respectively assigned to the local diffraction pattern (6) with best agreement between the chromatically additive brightness values (10, 10') and a simultaneously maximum trichromatically additive brightness value (11, 11').

A3

14. (Amended) The grating optical sensor as claimed in claim 1, characterized in that the evaluation device includes a color value forming unit (14) whose output signal respectively corresponds to the sum of the local chromatically additive brightness values (10, 10'), referred to the white standard signal, of a diffraction pattern (6).

A4

17. (Amended) The method as claimed in claim 15, characterized in that the sum of the chromatically additive brightness values referred to a white standard signal is formed in order to generate a color value signal from the diffraction pattern assigned to a colored part of the object space.--